

 antitussives, antihistamines, bronchodilators, topical anesthetics, sensory agents, oral care agents, miscellaneous respiratory agents, and mixtures thereof[.]; and (c) a per oral or oral aqueous carrier,

wherein the composition has a sedimentation volume ratio of greater than about 0.90 when measured after about 48 hours and a triggered viscosity ratio of at least about 1.2[.]; and wherein the composition is administered by swallowing.

### REMARKS

Claims 1-12, 24, 26, 28 are pending in the present application. Claims 13-23, 25, 27 and 29 have been cancelled. The basis for the amendment to include a per oral or oral aqueous carrier can be found on page 16, lines 24-26 and page 17 lines 1-5. The basis for the amendment relating to administration by swallowing is found at page 19, lines 1-2.

#### 35 U.S.C. Section 102 (b) Rejection

Claims 1-11, 13-23, 25 and 29 are rejected under 35 U.S.C. §102(b), as being anticipated by Boltri et al., EP 733 357. Applicant traverses the rejection under the following basis.

All the claims relating to "nasal" compositions, specifically Claims 13-23, 25, 27, and 29, have been cancelled. Boltri does not anticipate the remaining claims as amended herein. To anticipate, a prior art reference must incorporate each and every element of the claimed invention. *See Alco Standard Corp. v. TVA*, 1 USPQ2d 1337, 1341 (Fed. Cir. 1986). Boltri does not disclose every element of the instant claims because Boltri does not incorporate a per oral or oral aqueous carrier. *See Claim 1, as amended.* Boltri teaches topical administration on the skin and vaginal, nasal and otological administration where, in each case, delivery is by means of a mechanical pump. *See Boltri* at page 3, lines 13-17. Boltri does not disclose oral or per oral administration, therefore, Boltri does not anticipate the present invention under 35 U.S.C. §102. Thus, withdrawal of the rejection on this basis is respectfully requested.

### 35 U.S.C. Section 103(a) Rejection

Claims 1-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Boltri as applied to claims 1-11, 13-23, 25 and 29 above. Applicant traverses the rejection under the following basis.

As stated above, Applicant has cancelled Claims 13-23, 25, 27 and 29, relating to “nasal” compositions. The claims remaining in the case relate to oral compositions. To support an obviousness rejection of these claims, the prior art reference must be considered as a whole and must teach or suggest all the claim limitations. *See Hodosh v. Block Drug Company, Inc.*, 786 F. 2d 1136, 1143 n.5 (Fed. Cir. 1986). *See also In re Royka*, 490 F.2d 981 (CCPA 1974). Further, there must be some suggestion or motivation to modify the reference to produce the instant invention. *See In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).

At the outset, it is noted that Boltri only contemplates compositions for “...topical administration on the skin, also for the vaginal, nasal, otological administration...” (Boltri page 3, lines 15-17) Nothing in Boltri teaches or suggests modification of the Boltri composition to an oral dosage form and there is no motivation to do so.

Moreover, Boltri does not teach or suggest all the elements of the present invention because Boltri does not teach the per oral or oral aqueous carrier of the present invention or provide motivation for one of skill in the art to so modify the formulation. Indeed, Boltri teaches a high viscosity, nearly semi-solid, composition that is destructured by a mechanical means. Specifically, Boltri discloses a nearly semi-solid, topical gel formulation that is sprayed and nebulized through the use of a mechanical pump. *See Boltri* at page 2, lines 3-4. The Boltri composition is thixotropic and so, after removal of the applied mechanical stress, the composition returns to its near semi-solid or gelatinous state and pre-nebulization viscosity. *See Boltri* at page 2, lines 23 and 41. One would expect that a thixotropic formulation as described by Boltri would produce unacceptable aesthetics for use as an oral or per oral composition because removal of the mechanical stress would cause the formulation to thicken in the mouth and make swallowing difficult. Thus, there is no motivation to add to the Boltri formulation a per oral or oral carrier because the disclosed properties would make the composition unacceptable for oral administration to the alimentary canal.

In contrast, the focus of the present invention is a swallowable liquid that provides good mucoadhesion. The present invention takes the form of a shear thinning, liquid composition. That is, when a very small stress is applied (e.g. from pouring, shaking or

swallowing) the present composition thins into a pourable liquid that can adequately spread and coat the mucosa. No applied mechanical stress is required as in the Boltri formulation. The small stress applied during pouring and swallowing is adequate to produce thinning of the liquid and makes the composition acceptable for oral administration. There is no motivation to modify the Boltri formulation to include an aqueous per oral or oral carrier because, as discussed above, Boltri does not suggest that the disclosed formulation would render acceptable aesthetic properties for oral administration. In fact, Boltri characterizes his disclosed invention as exhibiting pseudoplasticity, i.e. the viscosity decreases with the increase in the intensity of the applied stress. *See Boltri* at page 2, line 40. Thus, one of ordinary skill would not expect that substitution of the mechanical applied stress by mere swallowing or pouring and the addition of a per oral or oral aqueous carrier would result in shear thinning properties suitable for a swallowable liquid.

Finally, the mucoadhesive formulations of the present invention comprise colloidal suspensions that form a coating matrix on the epithelium of the alimentary canal or the gastrointestinal tract. Upon mixing with the gastrointestinal fluid, the viscosity of the formulation is greater than the viscosity of either the formulation prior to mixing or the gastrointestinal lining fluid alone, thereby achieving good mucoadhesion. There is no motivation or suggestion in Boltri that would cause one of ordinary skill in the art to modify the Boltri composition or route of administration (i.e. oral vs. topical/vaginal/otological) in order to achieve these mucoadhesive effects by delivery to the gastrointestinal tract through per oral or oral administration.

In short, Boltri relates to a topical, near semi-solid, composition with thixotropic properties. There is no suggestion that the Boltri composition could be modified to create an acceptable per oral or oral composition with good mucoadhesion properties or could be used orally in the manner of Claims 24, 26 and 28. Therefore, Boltri does not render the present invention obvious under 35 U.S.C. §103. Applicant respectfully requests reconsideration and withdrawal of this rejection.

#### CONCLUSION

Based on the above amendments and remarks, Applicant respectfully requests withdrawal of all rejections and allowance of all claims remaining in the case.



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November 28, 2000  
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